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EXAMINER
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BRUCKART, BENJAMIN R

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2155

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

09/710,646

Applicant(s)

FAKHOURI ET AL.

Examiner

Benjamin R. Bruckart

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 August 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 21-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 21-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_.

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### **Detailed Action**

Claims 21-27 are pending in this Office Action.

Claims 21, 25-26, 27 are amended.

### **Response to Arguments**

Applicant's arguments filed in the amendment filed 8/10/07, are not persuasive. The reasons are set forth below.

### **Applicant's invention as claimed:**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

**Claims 21,25, 26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

The 35 U.S.C. 112, second paragraph rejection is withdrawn from claims 21, 25,2 26 reciting in a 'systematic manner.' Applicant's arguments have narrowed the definition of this word to mean 'involving a system.' Therefore other definitions or interpretations of systematic are to be discarded.

However:

Claims 21, 25 and 26 recite “a globally optimal configuration” in the limitation after the preamble. How is it globally optimal? Are there locally optimal solutions? Is this just what the claim intends to do?

Claims 21, 25 and 26 recite “occasionally changing resources” in the 4<sup>th</sup> indented limitation. This comes back to an earlier issue we had with ‘occasionally.’ See the final of May 06. This term is indefinite and does not adequately describe what the invention is claiming. Again how is the first group of static and occasionally changing resources different from the second group of dynamically changing events.

Claims 21, 25 and 26 recite “including, for each service,...” This is the first mention of a service and there is a lack of antecedent basis for the claims. Is applicant referring to the quality of service associated with events or some new service? What service, each service of what?

Claims 21, 25 and 26 recite “the supporting services.” There is a lack of antecedent basis for this limitation. What are the support services?

Claims 21, 25 and 26 recite “a desired level of automation” in the fifth indentation of the limitation. It is unclear what a desired level of automation is exactly as it is a relative term. Desired by whom or what entity? This is not a further limiting limitation.

### **Claim Rejections - 35 USC § 102**

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

**Claims 21-24, 25 and 26 are rejected under 102(e) as being anticipated by U.S. Patent No. 6,178,529 by Short et al.**

Regarding claim 21, a method of managing a cluster of networked resources using rule-based constraints in a scalable clustering environment (Short: col. 5, lines 46- col. 6, line 9; resources have dependencies and are managed), the method comprising the steps of:

building a globally optimal configuration of said cluster of resources (Short: col. 5, lines 46- col. 6, line 9; col. 7, lines 38-54), wherein each of the resources has an availability and quality of service, and the availabilities and quality of services of the resources are determined by the dependencies among the resources, user preferences, constraints on the resources, events, and network policies (Short: col. 6, lines 28-45 teaches availability... online, offline, paused. Col. 8, lines 42-50 teaches quality associated with the service as failed or online [available]),

bringing said cluster of resources on-line in a systematic manner (Short: col. 5, lines 46- 53; startup/initialization; col. 6, lines 46-65), current states of said resources and resource groups, and said dependences, preferences, constraints, events, and policies, (Short: col. 5, lines 23-53),

determining dynamic dependencies of and configuration information about said cluster of resources, including determining said dependencies and configuration information (i) at cluster initialization (Short: col. 5, lines 46-53; startup/initialization; col. 6, lines 46-65) and (ii) dynamically during cluster operation (Short: col. 7, lines 13-53), supporting startup and shutdown of said cluster of resources according to current policies, and system events (Short: col. 5, lines 46-53; startup/restart/failover),

separating said dependencies, preferences, constraints, events, and policies into (i) a first rules based group (Short: col. 5, lines 46- col. 6, line 9) and (ii) a second dynamically changing events based group (Short: col. 6, lines 28-45), wherein said first group captures the static resources and the occasionally changing resources, including for each service, the type and quality of the supporting services needed to enable said each service (Short: col. 5, lines 46- col.

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6, line 9; col. 6, lines 46-65; manages the resources into groups based on dependencies and types), and

combining said first and second groups only when needed to build the said optimal configuration, whereby by separating the dynamic dependencies, preferences, constraints, events and policies from other dependencies, preferences, constraints, events, and policies, and then combining said first and second groups in a systematic manner only when needed, a desired level of automation is achieved in the coordination and mapping of resources and services (Short: col. 5, lines 22-36).

Claims 25 and 26 are rejected under the same grounds of above as being substantially similar.

Regarding claim 22, a method according to Claim 21, comprising the further steps of: continuously monitoring cluster-wide events and comparing the current cluster state with a desired state (Short: col. 5, lines 23-40), and whenever there is a discrepancy between said current and desired states, realigning the cluster resources, including the step of issuing commands to the cluster resources to bring about the realigning (Short: col. 5, lines 23-45);

providing a group of cluster services, including:

- i) a persistent cluster registry to store and retrieve the configuration of the cluster resources (Short: col. 5, lines 23-45; database manager),
- ii) topology services for detecting node and communication adapter failures (Short: col. 5, line 66- col. 6, line 10; resource monitor),
- iii) messaging for selected communications between a central resource and all other resources (Short: col. 4, lines 55- col. 5, line 10), and
- iv) a group services facility for electing one of the resources as the central resource at cluster initialization and whenever an existing central resource is unable to provide the services thereof (Short: col. 4, lines 32-53; col. 6, line 66- col. 7, line 12),

delivering events to a coordinator, said coordinator combining said events with said rules and objectives to arrive at a response to said events (Short: col. 6, lines 10-20; col. 5, lines 46-65; the coordinator=resource manager);

translating the response into commands to the resources each of the commands containing all the state needed for execution of the command by a manager of one of the resources, including the step of issuing the commands in a partial order given by said dependencies (Short: col. 5, lines 46-65); and

not sending out a new command until the leader resource is aware of a positive outcome of the commands that the execution of said new command depends on (Short: col. 5, lines 11-22; col. 7, lines 38-53; membership verification).

Regarding claim 23, a method according to Claim 22, wherein:

said coordinator ensures that globally-optimal solutions get deployed in the cluster in response to events in the cluster (Short: col. 5, lines 23- col. 6, line 10); and

all events and command feedback are directed to said coordinator (Short: col. 5, lines 66- col. 6, line 10).

Regarding claim 24, a method according to Claim 21, comprising the further steps of:

providing an optimizer module for computing a globally optimal solution based on said constraints and to current state of the cluster (Short: col. 5, lines 23-65);

using the optimizer for re-computing the globally optimal solution whenever an objective value of a deployed solution is below a certain value as compared to a proposed solution, including the step of feeding back to the optimizer an artificially generated event that forces the optimizer to re-compute the global solution (Short: col. 6, lines 28-45; col. 7, lines 55- col. 8, line 11);

providing the optimizer with a snapshot of the current state of the cluster (Short: col. 5, lines 23-45);

wherein the step of using the optimizer for re-computing the globally optimal solution includes the step of said optimizer, given said snapshot, proposing an approximately optimal cluster configuration that takes into account said current state of the cluster and long-term objectives defined for the cluster (Short: col. 5, lines 23- col. 6, line 10; desired configuration).

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.



**Claim 27 is rejected under 103(a) as being unpatentable by U.S. Patent No. 6,178,529 by Short et al in view of U.S. Patent No. 5,761,506 by Angle et al.**

Regarding claim 27, the Short reference teaches a method according to Claim 24.

The Short reference fails to state queues.

However, the Angle reference teaches a preprocessor module and a post-processor module (Angle: Fig. 1; col. 6, lines 3-14, 52-63);

the preprocessor module includes a preprocessor entry queue, the optimizer module includes an optimizer input queue, and the postprocessor module includes a postprocessor input queue (Angle: col. 10, lines 41-46);

a decision to do a resource reallocation results in the creation of a preprocessor task that is deposited in the entry queue of the preprocessor module (Angle: col. 5, lines 55-63); and

wherein said preprocessor task is an object having an entry method that, when invoked, results in the preprocessor task being executed (Angle: col. 6, lines 14-30), and execution of the preprocessor task results in either a postprocessor task being deposited in the post-processor input queue, an optimizer task being deposited in the optimizer input queue, or both (Angle: col. 6, lines 34-63);

the postprocessor task is scheduled by an invocation of the entry method associated with the postprocessor task (Angle: col. 6, lines 3-14, 52-63);

the optimizer task is scheduled by an invocation of the entry method associated with the optimizer task (Angle: col. 6, lines 3-14, 52-63); and

execution of the task results in a postprocessor task being deposited in the postprocessor input queue (Angle: col. 11, lines 34-52) in order to efficiently optimize the processing of multiple processes (Angle: col. 1, lines 50-65)

It would have been obvious at the time of the invention to one of ordinary skill in the art to create the method according to Short to include the queues and execution as taught by Angle in order to efficiently optimize the processing of multiple processes (Angle: col. 1, lines 50-65).

#### **REMARKS**

Applicant has made amendments to claims 21, 25-27. Claims 21, 25, 26 contain a substantial amendment but claim 27 fixed a 112 rejection.

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The claims are very difficult to read and are poorly worded. Many 112 issues for clarity purposes need to be resolved and cleaned up. While applicant continues to detail parts of the instant claims, the wording is vague and unclear.

**The Applicant Argues:**

The Short reference does not teach the newly amended claims.

**In response**, the examiner respectfully submits:

The Short reference still anticipates the claimed limitations. Applicant's broad and non-limiting claim language is still anticipated by Short. Short teaches categorizing and separating dependencies into different groups based on different needs/types/dependencies. Short then starts the resources up in a manner that optimizes performance, grouping and assembling them. Applicant focuses on the term 'separating' but it is unclear exactly how they are separated. Short separates the resources into groups see col. 5-6 and uses their dependencies when assigning and allocating. Based on the claim terminology it is unclear whether the separated groups are assigned or in use or why they are separated before being integrated again. Short teaches separation and group membership of resources in order to provide services.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin R. Bruckart whose telephone number is (571) 272-3982. The examiner can normally be reached on 9:00-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Saleh Najjar can be reached on (571) 272-4006. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Benjamin R Bruckart  
Examiner  
Art Unit 2155

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SUPERVISORY PATENT EXAMINER